

FIG. 1

- 1 FRAME MEMORY
- 2 PIXEL READ SECTION
- 3 $\Delta\Sigma$ MODULATION SIGNAL PROCESSING SECTION
- 4 DRIVE SECTION
- 5 LIGHT EMISSION DISPLAY

FIG. 2

(a)

- 33 QUANTIZER
[FOUR-VALUE OUTPUT]

- 34 ENCODER
[BINARY OUTPUT]

(b)

- 33 QUANTIZER
[FOUR-VALUE OUTPUT]

- 34 ENCODER
[BINARY OUTPUT]

FIG. 3

(a)

WEIGHT 1 OUTPUT WEIGHT a1 OUTPUT

(b)

COMBINED OUTPUT OF WEIGHTS 1 AND a1

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FIG. 4

A.

WEIGHT RATIO OF TWO OUTPUTS

INPUT RANGE: x_1 TO x_2

(AS CONVERSION OF EIGHT BITS: 0 TO 255)

FOUR VALUES OF QUANTIZER OUTPUT

y_1, y_2, y_3, y_4

THREE LEVELS OF QUANTIZER THRESHOLD

z_1, z_2, z_3

B.

$1:a_1$ WHERE $a_1 > 1$

-127.5 TO +127.5

(CENTER IS 0.0 AND WIDTH IS 255)

AS PEAK-TO-PEAK VALUE,

$[y_1, y_4] = [x_1 - \alpha, x_2 + \alpha]$

SET A LITTLE WIDER THAN INPUT

AS INTERMEDIATE VALUES

y_2 AND y_3 ARE SET SO THAT $(y_4 - y_1) : (y_3 - y_1) : (y_2 - y_1) = (a_1 + 1) : a_1 : 1$.

$z_1 = (y_1 + y_2) / 2$

$z_2 = (y_2 + y_3) / 2$

$$z3 = (y3+y3)/2$$

SET TO MIDDLE POINT OF LEVEL DIFFERENCE

FIG. 5

A. INPUT RANGE

B.

QUANTIZER

DETERMINATION LEVEL

OUTPUT RANGE

C. COMPOSITE OUTPUT OF WEIGHTS 1 AND a1

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FIG. 6

(a) WHEN $a1=2$

IF THE PEAK-TO-PEAK VALUE IS, FOR EXAMPLE, $[y1, y4] = [-130.5, +130.5]$, OTHERS ARE DETERMINED $[y2, y3] = [-43.5, +43.5]$. IN CONCLUSION, $[y1, y2, y3, y4] = [-130.5, -43.5, +43.5, +130.5]$

(b) WHEN $a1=4$

IF THE PEAK-TO-PEAK VALUE IS, FOR EXAMPLE, $[y1, y4] = [-132.5, +132.5]$, OTHERS ARE DETERMINED $[y2, y3] = [-79.5, +79.5]$. IN CONCLUSION, $[y1, y2, y3, y4] = [-132.5, -79.5, +79.5, +132.5]$

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FIG. 7

(a)

10

QUANTIZER

[OUTPUT VALUE "a1"]

20

QUANTIZER

[OUTPUT VALUE "1"]

35 DISTRIBUTOR

(b)

10

QUANTIZER

[OUTPUT VALUE "a1"]

20

QUANTIZER

[OUTPUT VALUE "1"]

35 DISTRIBUTOR

FIG. 8

(a)

WEIGHT 1 OUTPUT WEIGHT a1 OUTPUT

FIG. 9

A.

WEIGHT RATIO OF TWO OUTPUTS

INPUT RANGE: x_1 TO x_2

(AS CONVERSION OF EIGHT BITS: 0 TO 255)

FOUR VALUES OF QUANTIZER OUTPUT IN METHOD 1

y_1, y_2, y_3, y_4

(AS REFERENCE VALUES TO SET p_1, p_2, q_1 , AND q_2)

TWO VALUES OF WEIGHT 1 QUANTIZER OUTPUT

p_1, p_2

THRESHOLD LEVEL p_{z1}

TWO VALUES OF WEIGHT a_1 QUANTIZER OUTPUT

q_1, q_2

THRESHOLD LEVEL q_{z1}

B.

$1:a_1$ WHERE $a_1 > 1$

-127.5 TO +127.5

(CENTER IS 0.0 AND WIDTH IS 255)

AS PEAK-TO-PEAK VALUE,

$[y_1, y_4] = [x_1 - \alpha, x_2 + \alpha]$

AS INTERMEDIATE VALUES

y2 AND y3 ARE SET SO THAT $(y4-y1):(y3-y1):(y2-y1) = (a1+1):a1:1$.

$$p1 = -(y2-y1)/2$$

$$p2 = +(y2-y1)/2$$

$$pz1 = 0.0 \quad \text{CENTER VALUE OF } p1 \text{ AND } p2$$

$$q1 = -(y3-y1)/2$$

$$q2 = +(y3-y1)/2$$

$$qz1 = 0.0 \quad \text{CENTER VALUE OF } q1 \text{ AND } q2$$

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FIG. 10

(a)

WEIGHT 1 OUTPUT

(b)

WEIGHT a1 OUTPUT

FIG. 12

(a)

ORGANIC EL ELEMENT

(b)

ONE SUBFRAME

DATA WRITE

DRIVE

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